9.7 cm

ROLE OF THE SURFACE ENERGY FOR THE FORMATION OF DOMAIN STRUCTURE DURING MAGNETOELASTIC PHASE TRANSITIONS

E.V. Gomonaj and V. M. Loktev
National Technical University of Ukraine "KPI", 37, ave Peremogy
Kyiv, 252056, Ukraine

The formation of the domain structure during thermoelastic phase transition (particularly, magnetoelastic phase transition in the easy-plane antiferromagnet) can be treated as thermodynamically preferable if free energy of the sample is minimized with the account of surface energy. The analogy between the role of magnetostatic energy in ferromagnets and surface energy of thermoelastics is traced, namely, the condition of zero averaged displacements on the sample surface is equivalent to zero averaged magnetization of the ferromagnetic sample. "Demagnetization" strain field is calculated for the rhombohedral-to-orthorhombic phase transition in the disk-shaped easy-plane antiferromagnet.

13.4 cm

Subject category :

2. Magnetic Films, Surfaces and Multilayers

Presentation mode :
poster

Corresponding author :
Helen Gomonaj

Address for correspondence :
18, Klovskii spusk, apt.74
252021 Kyiv, Ukraine
Phone: +38(044) 241-7712
Fax: +38(044) 241-7712

Email address :
malyshen@ukrpack.net